

SPOTS ON THE MOON

by

Henry Jerome Sandler

INTRODUCTION

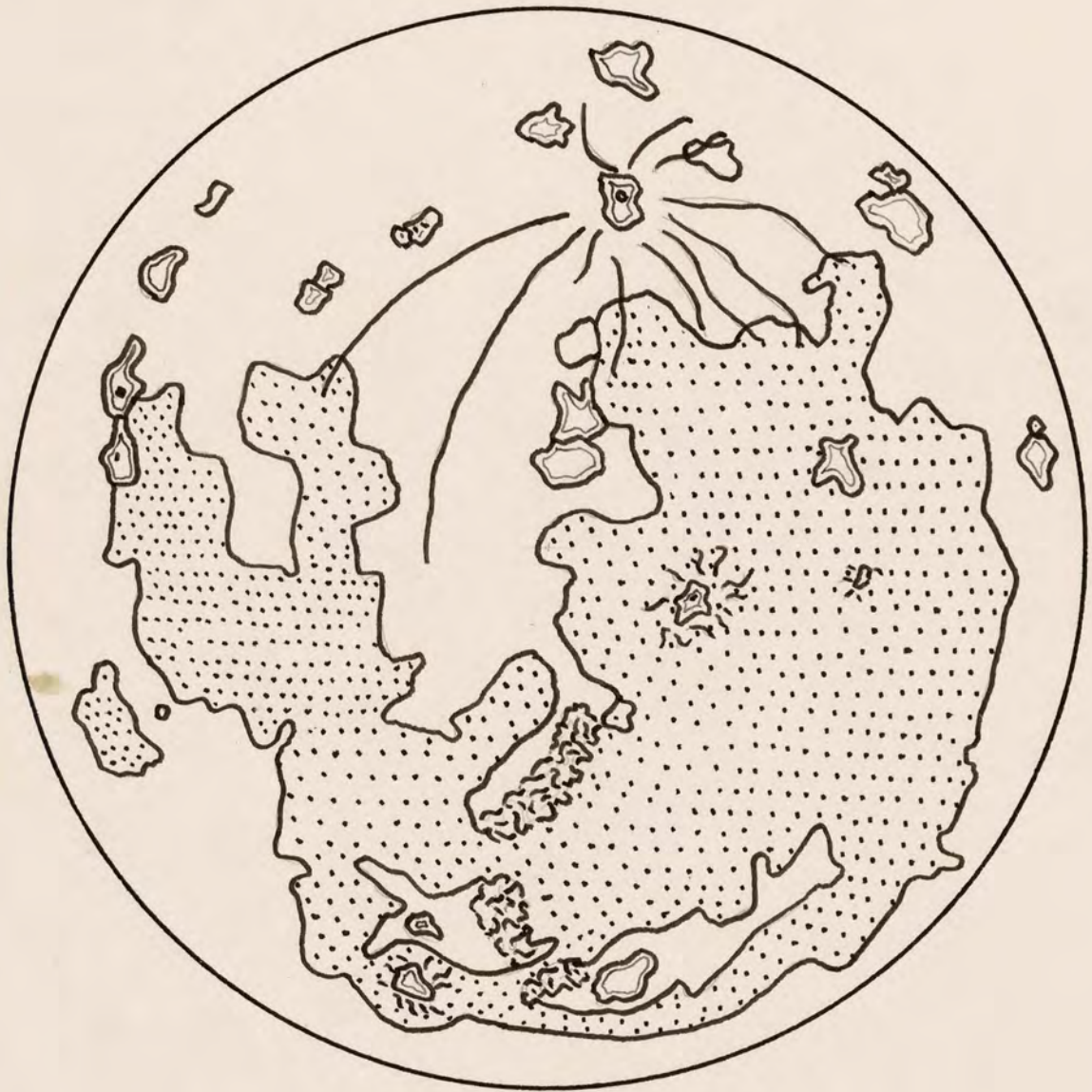
The purpose of this paper is to present to the layman a general survey of the surface formations to be found on the lunar crust, and to discuss the theories that have been advanced pertaining to the origin of some of these features. Some of the work in this paper was done during October, 1941, with the aid of a one-inch telescope.

SPOTS ON THE MOON

One of the most interesting and engrossing spectacles which man witnesses everyday is that heavenly body known as the moon. Scientists have studied the moon since man first divorced the natural phenomena from superstition and blind ritual. Physicists and mathematicians have long since investigated the laws of dynamics that govern its motion, and as a result, have produced formulae and equations which describe its position and the exact forces it exerts or are exerted upon it at any given time. Celestial cartographers have turned their attention to the moon and have mapped every square mile of the 59% of its surface area that can be seen from the earth and is available for investigation. Our new telescopes have literally brought the moon into our own back-yards. However, in spite of its close proximity and our ability to perceive clearly the various surface formations, men of science, after more than two thousand years of probing and speculating, are still unable to agree on a theory that will fully account for the origin of some of them.

The lunar surface features may be classified generally as mountains, seas or maria, and craters. (See map on next page) The mountains that are found on the moon are quite comparable to those on our earth. There are about ten ranges, some of which are 400 miles long and attain altitudes of nearly 30,000 feet. The seas are vast plains, which give rise to the dark patches seen on the moon by the naked eye, and enable the imagination to fabricate the many various popular beliefs and fantasies concer-

MAP OF THE MOON'S VISIBLE SURFACE AREA



 Maria

 Mountains

 Craters

ning the moon. the mountains and maria no doubt orginated in a similar manner to the corresponding features on the earth, i.e., through shrinkage of the crust and weathering.

The most noticeable lineaments on the lunar surface area, when viewed through a telescope, are the craters. Over 35,000 of these formations have been recorded. The craters range in size from several which are 150 miles in diameter (an area greater than that of the State of Maryland) down to the smallest dot visible in our largest telescope, about one-tenth of a mile across. There are many speculative theories as to the origin of these indentations on the lunar topography. The main hypotheses which try to explain their presence are those which involve volcanic action and the meteorological bombardment of the moon's surface. It is almost impossible to define their origin by drawing analogies between the craters that are seen on the moon and those that are found on the earth because of the vast differences that exist between the two bodies.

Even if we take into account the smaller gravitational pull of the moon, and also the fact that it has no atmosphere to offer protective resistance to foreign bodies, we still cannot reconcile the origin of the lunar craters to similar structures on the earth. If we say that these lineaments were caused by the striking of meteors, as some scientists contend, we can refute that by showing that because of the proximity of the earth it too would have undergone the same shower. Yet the largest crater to be found on the earth is the Coon Butte Crater in Arizona, which measures a mere three-quarters of a mile in diameter.

The enormous size of some of the crater and the fact that there is very little evidence of lava flow tends to cast doubt on the volcanic eruption theory.

Perhaps, if new forces are found to be acting on the moon, or if the other side of the moon is ever seen, or if new discoveries are made as to the actual composition of the lunar surface, someday a timeless mystery of our nearest heavenly neighbor will be solved.

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